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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,562	05/03/2005	Kenji Oshima	P27820	4028
7055 7590 02/12/2008 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				
EXAMINER				
SHAH, MANISH S				
ART UNIT		PAPER NUMBER		
2853				
NOTIFICATION DATE		DELIVERY MODE		
02/12/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

### Office Action Summary

**Application No.**

10/533,562

**Applicant(s)**

OSHIMA ET AL.

**Examiner**

Manish S. Shah

**Art Unit**

2853

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-8, 10-22 and 52-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-8 and 52-56 is/are allowed.
- 6) ☒ Claim(s) 1, 10-18, 20-22 and 56 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 10-18, 20-22 & 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (# US 6783227) in view of Kameda et al. (# US 5745222).

With respect to claims 1 and 56, Suzuki discloses an ink jet recording apparatus which includes an ink jet head (figure: 1-2: element 4) whose recording-medium (99) opposing surface that opposes a recording surface of a recording medium is furnished with an ink ejecting portion formed with open ends of a plurality of nozzle holes for ejecting a UV curable ink, and a head moving mechanism (element 3) for putting the ink jet head into reciprocating motion in a predetermined direction parallel to the recording surface of the recording medium, and which performs recording by ejecting the ink from the nozzle holes of the ink jet head onto the recording surface of the recording medium (figure: 1-2) and then curing the ink ejected and attached onto the recording surface of the recording medium by irradiation with ultraviolet light (element 5), at least when the head moving mechanism puts the ink jet head into a forward motion of the reciprocating motion, wherein the ink jet head or a moving member which moves together with the ink

jet head is provided with a plurality of ultraviolet light emitting diodes (Column 5: line 54-60) for emitting the ultraviolet light to the ink attached onto the recording surface of the recording medium to cure the ink. They also discloses wherein the apparatus is configured so, that the ultraviolet light emitted from the ultraviolet light emitting diodes is applied via a light guiding member to the ink attached to the recording medium (figure: 7, element 9).

With respect to claim 10, Suzuki discloses wherein the apparatus is configured so that each time the ink jet head performs a forward motion and a backward motion of the reciprocating motion, the ink is ejected from the nozzle holes of the ink jet head onto the recording surface of the recording medium so as to perform recording, and the ultraviolet light emitting diodes (figure: 1, 2: element 5) are disposed at both sides of the ink ejecting portion (element 4) with respect to the direction of the reciprocating motion of the ink jet head.

With respect to claim 11, Suzuki discloses wherein the apparatus is configured so that in each of the forward and backward motions of the ink jet head, at least the ultraviolet light emitting diodes rearward of the ink ejecting portion with respect to the moving direction of the ink jet head emit the ultraviolet light (figure: 1, 2)

With respect to claim 12, Suzuki discloses wherein the apparatus is configured so that only when the ink jet head performs a forward motion of the reciprocating motion, the ink is ejected from the nozzle holes of the ink jet head onto the recording surface of the recording medium so as to perform recording, and the ultraviolet light

emitting diodes are disposed rearward of the ink ejecting portion with respect to the direction of the forward motion of the ink jet head (figure: 1, 2).

With respect to claim 14, Suzuki discloses wherein the nozzle holes are formed in a nozzle plate (Column 8: line 60-67) which forms the recording medium opposing surface of the ink jet head (figure: 2), and the ultraviolet light emitting diodes (5) are disposed on a member other than the nozzle plate.

With respect to claim 15, Suzuki discloses wherein the apparatus is configured so that the ultraviolet light emitting diodes (figure: 7: element 5) are placed in a case (element 9) and that the ultraviolet light is emitted through a surface of the case.

With respect to claim 16, Suzuki discloses wherein the case (element 9) is disposed so that the ultraviolet light emitting surface thereof is in the same plane as the recording medium opposing surface of the ink jet head.

With respect to claim 20, Suzuki discloses wherein the case (element 9) is disposed at least rearward of the ink ejecting portion with respect to the direction of the forward motion of the ink jet head, and a light blocking member (figure: 7: element 11) for preventing part of the ultraviolet light emitted by the ultraviolet light emitting diodes from reaching the ink ejecting portion is provided between the case and the ink ejecting portion.

With respect to claim 21, Suzuki discloses wherein a heat conduction member for conducting, to the ink within the ink jet head, heat produced by the emission by the ultraviolet light emitting diodes is provided (element 5).

With respect to claim 22, Suzuki discloses a radiator for dissipating heat produced by the emission by the ultraviolet light emitting diodes (element 5) is provided.

With respect to claim 13, since Suzuki discloses the nozzle holes are formed in a nozzle plate (figure: 3, Column 12: line 43-54), which forms the recording medium opposing surface of the ink jet head, and the ultraviolet light emitting diodes are disposed on the carriage. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the diode are disposed on the nozzle plate. Since applicant has not disclosed that having diode on the nozzle plate solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any place.

With respect to claims 17 and 18, Suzuki discloses the UV is disposed is the case (9). However, applicant does not clearly claim that how the case configured or located so that the ultraviolet light emitting surface thereof is located closer or farther to the recording medium than the recording medium opposing surface of the ink jet head is. Suzuki discloses the same structure therefore it would perform the same.

Suzuki et al. discloses all the limitation of the ink jet recording apparatus except that the light guiding member is transparent.

Kameda et al. teaches that to prevent the ultraviolet light ray, UV florescent lamp is enclosed by casing, and transparent mount is provided on top of casing (column: 1, line: 10-30; column: 13, line: 40-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet recording apparatus of Suzuki et al. by the aforementioned

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teaching of Kameda et al. in order to prevent the ultraviolet ray, which gives better radiation, which gives high quality recording apparatus.

***Allowable Subject Matter***

2. Claims 4-8 & 52-55 are allowed.
3. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Manish S. Shah/  
Primary Examiner  
Art Unit 2853

/M. S. S./  
1/30/08